

**HAMPDEN COUNTY
REGIONAL RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2006

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Report Summary:

<u>Highlights</u>	<u>January 1, 2005</u>	<u>January 1, 2006</u>
<u>Contributions</u>		
Funding Schedule FY 2007	\$15,233,818	\$15,233,818
Funding Schedule FY 2008	15,794,896	15,851,384
<u>Funded Ratios</u>		
GAS No. 25	60.6%	60.4%
<u>Participants</u>		
Actives	2,606	2,589
Retirees and Beneficiaries	1,330	1,351
Vested	0	0
Inactives	464	437
Disabled	<u>117</u>	<u>115</u>
Total	4,517	4,492
<u>Payroll</u>		
Payroll of Active Members	\$74,555,992	\$77,836,219
Average Payroll	28,609	30,064
<u>Normal Cost</u>		
Employer	4,411,823	4,612,942
Employee	5,906,629	6,187,116
Administrative Expenses	<u>450,000</u>	<u>460,000</u>
Total	10,768,452	11,260,058
<u>Actuarial Accrued Liabilities</u>		
Actives	158,056,507	164,867,944
Retirees, Beneficiaries, Disabilities and Inactives	<u>156,497,248</u>	<u>167,271,545</u>
Total	317,047,443	332,139,489
<u>Actuarial Value of Assets</u>	<u>191,979,825</u>	<u>200,497,347</u>
<u>Unfunded Actuarial Accrued Liabilities</u>	\$125,067,618	\$131,642,142

Introduction

This report presents the Hampden County actuarial valuation findings as of January 1, 2006, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2006.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Hampden County Regional Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2006.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability increased by 5.3% to \$131,642,142. The increase is the result of net unfavorable actuarial experience during the preceding year. The primary component of the unfavorable experience was an investment return less than the 8.5% assumption. The actuarial value of assets had returns of 4.75% for 2005. The result is a loss of \$7.2 million. The sources of (gains) and losses are summarized as follows:

Asset (Gain)/Loss	7,194,291
Liability (Gain)/Loss	(3,218,167)
Salary Increases	(2,840,441)
New Participants	1,979,464
Active - Retirements	770,945
Active - Terminations	90,985
Active - Mortality	(36,506)
Active - Disabilities	633,109
Inactive - Mortality	23,598
Data changes	(458,647)
Assumptions and other	(3,380,674)

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
Superannuation	\$7,281,057	\$7,671,369
Termination	1,044,147	1,092,683
Death	563,145	592,555
Disability	1,430,103	1,443,451
Administrative Expenses	<u>450,000</u>	<u>460,000</u>
Total Normal Cost	10,768,452	11,260,058
% of Pay	14.4%	14.5%
Employee Contributions	5,906,629	6,187,116
% of Pay	7.9%	7.9%
Employer Normal Cost	\$4,861,823	\$5,072,942
% of Pay	6.5%	6.5%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
Actives		
Superannuations	\$140,301,024	\$146,832,256
Termination	3,406,817	3,468,874
Death	4,248,177	4,412,078
Disability	10,100,489	10,154,736
Retirees and Inactives		
Retirees and Beneficiaries	128,561,592	138,455,716
Vested	0	0
Terminated (Refund)	2,493,688	2,424,741
Disabled	<u>27,935,656</u>	<u>26,391,088</u>
Total	\$317,047,443	\$332,139,489

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants.

The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
Actives		
Superannuation	\$206,624,310	\$215,462,173
Termination	7,717,315	7,966,221
Death	8,364,223	8,715,026
Disability	24,747,869	24,750,640
Retirees and Inactives		
Retirees and Beneficiaries	128,561,592	138,455,716
Vested	0	0
Terminated (Refund)	2,493,688	2,424,741
Disabled	<u>27,935,656</u>	<u>26,391,088</u>
Total	\$406,444,653	\$424,165,605

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
Cash equivalents	\$3,289,448	\$8,365,074
Short term investments	2,939,686	0
Fixed income securities	50,806,256	49,091,322
Equities	92,282,474	94,848,168
International	21,927,735	24,550,273
Real Estate	10,008,138	15,909,778
Venture Capital	0	0
Other	4,912,253	4,406,403
Accounts receivable	446,292	471,869
Accounts payable	0	0
Accrued income	<u>153,077</u>	<u>144,754</u>
Total Market Value	\$186,765,359	\$197,787,641
Total Actuarial Value	\$191,979,825	\$200,497,347

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.5%) and for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected accounting return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2006 is presented in Table V.

Table V

	<u>January 1, 2006</u>
(1) Market value at January 1, 2005	\$186,765,359
(2) 2005 Contributions and Receipts	\$21,177,769
(3) 2005 Benefit Payments and Expenses	(\$21,759,517)
(4) Net interest adjustment at 8.5% on (1), (2), and (3) to December 31, 2005	\$15,850,331
(5) Expected market value on January 1, 2006	\$202,033,941
(1) + (2) + (3) + (4)	
(6) Actual market value on January 1, 2006	\$197,787,641
(7) 2005 (Gain) / Loss	\$4,246,300
(8) 80% of 2005 (Gain) / Loss	\$3,397,040
(9) 2004 (Gain) / Loss	(\$678,646)
(10) 60% of 2004 (Gain) / Loss	(\$407,188)
(11) 2003 (Gain) / Loss	(\$17,410,093)
(12) 40% of 2003 (Gain) / Loss	(\$6,964,037)
(13) 2002 (Gain) / Loss	\$33,419,452
(14) 20% of 2002 (Gain) / Loss	\$6,683,890
(15) Actuarial value on January 1, 2006, (6) + (8) + (10) + (12) + (14)	\$200,497,347
(16) but not less than 80% nor greater than 120% of (6)	\$200,497,347
Ratio of actuarial value to market value	101.37%
Market Value Return on investments	6.22%
Actuarial Value Return on investments	4.75%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
Actuarial Accrued Liability	\$317,047,443	\$332,139,489
Actuarial Assets	<u>191,979,825</u>	<u>200,497,347</u>
Unfunded Actuarial Accrued Liability	\$125,067,618	\$131,642,142
Funded Status	60.6%	60.4%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2026
\$ 125,519,707 over 20 years with 4.5% increasing payments
- Level amortization of the 1992 Early Retirement Incentive by June 30, 2008
\$ 26,089 over 2 years
- Increasing amortization of the 2002 ERI by June 30, 2019
\$ 1,249,103 over 13 years
- Level amortization of the 2002, 2003 ERI and Holiday by June 30, 2020
\$ 871,120 over 14 years
- Increasing amortization of the current (gains)/losses by June 30, 2026
\$ 3,976,123 over 20 years with 4.5% increasing payments
- Interest adjustment for payments deposited semiannually.

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
Normal cost	\$4,861,823	\$5,072,942
Amortization payment of the prior accrued liability	8,572,292	8,760,316
Amortization payment of ERI and Holiday	13,576	263,498
Amortization payment of current (gains)/losses	<u>0</u>	<u>277,503</u>
Total cost	\$13,447,691	\$14,374,259
% of Pay	18.0%	18.5%
Fiscal 2007 cost	\$15,233,818	\$15,233,818
Fiscal 2008 cost	\$15,794,896	\$15,851,384

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made semiannually.

The employer total cost is expected to increase during the next 20 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 19.5% of payroll, decreasing to 16.8% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 4.2% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast

Fiscal Year	Employee	Employer	Amortization	Employer	Employer	Funded
Ending	Payroll*	Contribution	Normal Cost with Interest	Payments with Interest	Total Cost with Interest	Ratio %**
					% of Payroll	
2007	\$77,836,219	\$6,187,116	\$5,391,901	\$9,841,917	\$15,233,818	19.6
2008	\$81,338,849	\$6,564,348	\$5,529,512	\$10,321,872	\$15,851,384	19.5
2009	\$84,999,097	\$6,963,002	\$5,668,590	\$10,759,323	\$16,427,913	19.3
2010	\$88,824,056	\$7,384,241	\$5,808,987	\$11,231,539	\$17,040,526	19.2
2011	\$92,821,139	\$7,829,293	\$5,950,541	\$11,725,005	\$17,675,546	19.0
2012	\$96,998,090	\$8,299,445	\$6,093,072	\$12,240,676	\$18,333,748	18.9
2013	\$101,363,004	\$8,796,058	\$6,236,381	\$12,779,553	\$19,015,934	18.8
2014	\$105,924,339	\$9,320,559	\$6,380,249	\$13,342,679	\$19,722,928	18.6
2015	\$110,690,935	\$9,874,453	\$6,524,437	\$13,931,146	\$20,455,583	18.5
2016	\$115,672,027	\$10,459,323	\$6,668,681	\$14,546,094	\$21,214,775	18.3
2017	\$120,877,268	\$11,076,836	\$6,812,696	\$15,188,715	\$22,001,411	18.2
2018	\$126,316,745	\$11,728,745	\$6,956,168	\$15,860,254	\$22,816,422	18.1
2019	\$132,000,999	\$12,416,895	\$7,098,756	\$16,562,011	\$23,660,767	17.9
2020	\$137,941,044	\$13,143,228	\$7,240,092	\$17,136,248	\$24,376,340	17.7
2021	\$144,148,390	\$13,909,787	\$7,379,772	\$17,796,050	\$25,175,822	17.5
2022	\$150,635,068	\$14,718,721	\$7,517,363	\$18,596,873	\$26,114,236	17.3
2023	\$157,413,646	\$15,572,291	\$7,652,392	\$19,433,732	\$27,086,124	17.2
2024	\$164,497,260	\$16,472,878	\$7,784,352	\$20,308,250	\$28,092,602	17.1
2025	\$171,899,637	\$17,422,984	\$7,912,692	\$21,222,121	\$29,134,813	16.9
2026	\$179,635,121	\$18,425,241	\$8,036,819	\$22,177,117	\$30,213,936	16.8
2027	\$187,718,701	\$19,482,420	\$8,156,094	\$0	\$8,156,094	4.3
2028	\$196,166,043	\$20,597,434	\$8,269,830	\$0	\$8,269,830	4.2
2029	\$204,993,514	\$21,524,319	\$8,641,972	\$0	\$8,641,972	4.2
2030	\$214,218,223	\$22,492,913	\$9,030,861	\$0	\$9,030,861	4.2
2031	\$223,858,043	\$23,505,094	\$9,437,250	\$0	\$9,437,250	4.2
2032	\$233,931,655	\$24,562,824	\$9,861,926	\$0	\$9,861,926	4.2
2033	\$244,458,579	\$25,668,151	\$10,305,713	\$0	\$10,305,713	4.2
2034	\$255,459,215	\$26,823,218	\$10,769,470	\$0	\$10,769,470	4.2
2035	\$266,954,880	\$28,030,262	\$11,254,096	\$0	\$11,254,096	4.2
2036	\$278,967,849	\$29,291,624	\$11,760,531	\$0	\$11,760,531	4.2
2037	\$291,521,403	\$30,609,747	\$12,289,754	\$0	\$12,289,754	4.2
2038	\$304,639,866	\$31,987,186	\$12,842,793	\$0	\$12,842,793	4.2

* Calendar basis

** As of the Beginning of Fiscal Year

GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII

	<u>January 1, 2005</u>	<u>January 1, 2006</u>
(1) Actuarial Accrued Liability	\$317,047,443	\$332,139,489
(2) Actuarial Value of Assets	<u>191,979,825</u>	<u>200,497,347</u>
(3) Unfunded Actuarial Accrued Liability	125,067,618	131,642,142
(4) Funded Ratio (2)/(1)	60.6%	60.4%
(5) Covered Payroll	\$74,555,992	\$77,836,219
(6) UAAL as a percentage of payroll: (3)/(5)	167.7%	169.1%
(7) Annual Required Contribution (ARC)	\$13,035,789	\$15,233,818
(8) Net Pension Obligation	\$0	\$0

PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2006.

The normal cost for employees on that date was:	\$6,187,116	7.9% of pay
The normal cost for the employer was:	4,612,942	5.9% of pay

The actuarial liability for active members was:	\$164,867,944
The actuarial liability for retired members was:	167,271,545
Total actuarial accrued liability:	332,139,489
System assets as of that date:	200,497,347
Unfunded actuarial accrued liability:	\$131,642,142

The ratio of system's assets to total actuarial liability was	60.4%
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The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.5%
Rate of Salary Increase:	5.5%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
	(a)	(b)				
01/01/06	\$200,497,347	\$332,139,489	\$131,642,142	60.4%	\$77,836,219	169.1%
01/01/05	191,979,825	317,047,443	125,067,618	60.6%	74,555,992	167.7%
01/01/04	187,556,932	294,799,663	107,242,731	63.6%	69,403,424	154.5%
01/01/03	175,587,680	281,630,496	106,042,815	62.3%	68,912,960	153.9%
01/01/02	168,722,805	268,661,316	99,938,511	62.8%	69,512,256	143.8%
01/01/01	175,985,360	241,080,485	65,095,125	73.0%	65,470,839	99.4%
01/01/00	173,574,907	226,808,635	53,233,728	76.5%	58,480,124	91.0%
01/01/99	153,484,932	207,750,431	54,265,499	73.9%	54,386,183	99.8%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

Age/Service Distribution with Salary as of January 1, 2006

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
20-24	27	1	0	0	0	0	0	0	0	0	28
	17,256	40,859	0	0	0	0	0	0	0	0	18,099
25-29	91	13	0	0	0	0	0	0	0	0	104
	25,889	29,669	0	0	0	0	0	0	0	0	26,361
30-34	60	57	15	3	0	0	0	0	0	0	135
	23,636	40,726	43,753	33,996	0	0	0	0	0	0	33,317
35-39	92	81	38	14	2	1	0	0	0	0	228
	25,220	34,619	45,141	36,652	31,838	55,003	0	0	0	0	32,770
40-44	133	107	36	57	23	3	0	0	0	0	359
	18,461	27,017	42,285	41,436	44,351	38,485	0	0	0	0	28,874
45-49	156	152	70	51	39	22	3	0	0	0	493
	20,071	19,864	27,027	33,130	45,470	45,971	33,695	0	0	0	25,594
50-54	108	139	98	76	36	38	23	1	1	1	520
	23,113	22,554	25,859	30,054	42,274	50,858	54,139	45,013	58,158	29,331	
55-59	61	79	65	80	38	35	22	11	0	0	391
	23,111	23,773	25,012	24,942	33,044	51,890	59,082	48,071	0	0	30,203
60-64	34	47	40	47	35	9	12	7	0	0	231
	18,349	27,816	24,777	28,064	25,842	33,364	43,813	59,650	0	0	27,660
65-69	6	18	7	10	9	8	6	0	0	0	64
	13,657	19,872	18,817	24,633	26,051	28,668	30,803	0	0	0	22,911
70+	1	6	3	7	6	4	7	1	1	1	36
	726	14,061	18,371	18,890	13,387	23,929	20,657	15,488	51,475	18,334	
Total Employees	769	700	372	345	188	120	73	20	2	2,589	
Average Salary	21,793	26,035	29,902	30,851	36,457	46,299	47,962	50,342	54,817	28,497	

Retiree Distribution as of January 1, 2006

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	1	2	6798	5520	12318
40-44	1	3	4	18,197	21,130	39,327
45-49	3	2	5	55,921	30,446	86,367
50-54	9	6	15	117,316	63,817	181,132
55-59	63	39	102	1,655,467	240,778	1,896,246
60-64	82	72	154	2,195,514	684,351	2,879,865
65-69	83	116	199	1,555,638	1,171,197	2,726,836
70-74	88	132	220	1,513,158	1,266,583	2,779,741
75-79	121	138	259	1,702,203	1,220,813	2,923,016
80-84	85	124	209	1,116,251	812,265	1,928,517
85-89	52	67	119	350,966	336,993	687,959
90-94	15	31	46	99,974	164,318	264,292
95-99	7	10	17	49,579	46,657	96,235
Total	610	741	1351	10,436,983	6,064,868	16,501,850
Average (Age/Payment)	72.8	74.7	73.9	17,110	8,185	12,215
Frequency Percent	45.2	54.8	100	63.2	36.8	100

Disabled Retiree Distribution as of January 1, 2006

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	4	1	5	131,596	40,574	172,171
35-39	3	1	4	104,051	40,094	144,145
40-44	4	0	4	101,187	0	101,187
45-49	8	1	9	194,847	7,753	202,600
50-54	13	1	14	386,364	38,246	424,610
55-59	19	2	21	431,964	10,710	442,674
60-64	9	1	10	233,046	28,035	261,081
65-69	18	1	19	424,183	24,928	449,111
70-74	14	0	14	290,748	0	290,748
75-79	10	2	12	215,560	12,324	227,884
80-84	1	1	2	17,864	23,348	41,211
85-89	0	1	1	0	15,323	15,323
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	103	12	115	2,531,409	241,336	2,772,745
Average (Age/Payment)	60.4	60.9	60.5	24,577	20,111	24,111
Frequency Percent	89.6	10.4	100	91.3	8.7	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2006	\$20,734,006	\$6,187,116	\$15,233,818	\$16,568,106	\$17,255,034
2007	\$21,510,233	6,564,348	15,851,384	\$17,976,254	18,881,752
2008	\$22,495,127	6,963,002	16,427,913	\$19,562,456	20,458,243
2009	\$23,505,379	7,384,241	17,040,526	\$21,283,212	22,202,599
2010	\$24,612,838	7,829,293	17,675,546	\$23,149,570	24,041,571
2011	\$25,918,029	8,299,445	18,333,748	\$25,165,463	25,880,628
2012	\$27,363,449	8,796,058	19,015,934	\$27,333,373	27,781,916
2013	\$28,930,076	9,320,559	19,722,928	\$29,659,466	29,772,877
2014	\$30,563,279	9,874,453	20,455,583	\$32,153,725	31,920,482
2015	\$32,487,432	10,459,323	21,214,775	\$34,820,219	34,006,885
2016	\$34,362,745	11,076,836	22,001,411	\$37,667,989	36,383,491
2017	\$36,443,380	11,728,745	22,816,422	\$40,711,224	38,813,011
2018	\$38,649,996	12,416,895	23,660,767	\$43,957,835	41,385,502
2019	\$40,990,220	13,143,228	24,376,340	\$47,416,458	43,945,806
2020	\$43,472,143	13,909,787	25,175,822	\$51,090,248	46,703,715
2021	\$46,104,344	14,718,721	26,114,236	\$54,996,894	49,725,507
2022	\$48,895,923	15,572,291	27,086,124	\$59,156,365	52,918,857
2023	\$51,856,530	16,472,878	28,092,602	\$63,582,979	56,291,929
2024	\$54,996,399	17,422,984	29,134,813	\$68,291,737	59,853,135
2025	\$58,326,384	18,425,241	30,213,936	\$73,298,333	63,611,126
2026	\$61,857,997	19,482,420	8,156,094	\$78,144,918	43,925,435
2027	\$65,603,446	20,597,434	8,269,830	\$81,765,622	45,029,440
2028	\$69,575,679	21,524,319	8,641,972	\$85,457,676	46,048,288
2029	\$73,788,427	22,492,913	9,030,861	\$89,227,665	46,963,012
2030	\$78,256,253	23,505,094	9,437,250	\$93,066,193	47,752,283
2031	\$82,994,603	24,562,824	9,861,926	\$96,962,017	48,392,164
2032	\$88,019,856	25,668,151	10,305,713	\$100,901,824	48,855,832
2033	\$93,349,383	26,823,218	10,769,470	\$104,869,980	49,113,285
2034	\$99,001,609	28,030,262	11,254,096	\$108,848,263	49,131,012
2035	\$102,324,462	29,291,624	11,760,531	\$112,926,785	51,654,478

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2006, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees for the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement**a. Eligibility:**

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability**a. Eligibility:**

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability**a. Eligibility:**

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits**a. Occupational Death:**

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2006.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.5% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 5.5% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of unrealized gains and losses.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2006 is \$460,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. **Actuarial Accrued Liability**

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. **Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. **Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. **Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Hampden County Regional Retirement System contributing as of January 1, 2006, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost is reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

June 2006

BREAKOUTS

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Breakouts - Payroll Based

Department	Participants	1/1/2006 Payroll	FYE 2007 Appropriation	FYE 2008 Appropriation	FYE 2009 Appropriation
Town of Agawam	473	\$ 16,593,740	\$ 3,091,862	\$ 3,320,454	\$ 3,448,656
Agawam Housing Authority	6	212,778	45,103	45,971	44,220
Town of Blandford	5	87,086	19,427	17,426	18,099
Town of Brimfield	38	755,738	137,451	154,305	160,028
Brimfield Housing Authority	2	44,939	8,966	8,992	9,340
Town of Chester	14	395,959	79,202	79,232	82,290
County of Hampden	8	197,801	55,248	39,582	41,110
Town of East Longmeadow	286	8,354,909	1,636,458	1,685,967	1,741,586
East Longmeadow Housing Authority	5	168,949	43,901	45,289	46,161
Town of Granville	41	672,745	121,301	137,997	143,068
Town of Hampden	19	762,348	131,505	152,547	158,437
Hampden Housing Authority	2	44,505	8,966	8,906	9,250
Hampden/Wilbraham Regional School District	205	4,680,742	786,041	936,630	972,793
Town of Holland	29	570,080	113,573	114,076	118,479
Town of Longmeadow	326	10,275,689	2,000,969	2,056,195	2,135,584
Town of Ludlow	308	9,924,446	1,909,812	1,985,909	2,062,585
Ludlow Housing Authority	5	141,088	32,809	37,500	38,243
Town of Monson	159	3,919,599	826,389	784,323	814,606
Monson Housing Authority	2	67,698	22,100	22,555	22,740
Town of Montgomery	5	104,456	20,921	20,903	21,709
Town of Palmer	196	5,712,313	1,414,556	1,282,467	1,321,366
Palmer Fire District	16	410,778	89,462	85,101	85,372
Palmer Housing Authority	2	44,903	7,472	8,984	9,332
Pathfinder Regional High School	28	842,022	156,909	168,492	174,997
Town of Russell	15	274,571	55,292	54,942	57,063
Town of Southwick	79	2,970,092	600,484	659,420	679,924
Three Rivers Fire District	10	128,600	25,404	25,732	26,726
Town of Tolland	4	134,720	33,693	35,590	36,306
Town of Wales	14	323,149	74,841	71,014	73,274
Western Hampden Veteran's District	3	100,121	20,921	20,035	20,809
Town of Wilbraham	136	6,140,754	1,128,253	1,228,782	1,276,225
Wilbraham Housing Authority	5	144,674	29,888	28,950	30,066
Eastern Hampden Veteran's District	1	30,563	5,978	6,115	6,352
Southwick Housing Authority	3	102,082	19,427	20,426	21,215
Southwick/Tolland Regional School District	139	2,501,581	469,234	500,575	519,902
Total	2,589	\$ 77,836,219	\$ 15,223,818	\$ 15,851,384	\$ 16,427,913

Breakouts - Actuarially Based

Department	Participants	1/1/2006 Payroll	FYE 2007 Appropriation	FYE 2008 Appropriation	FYE 2009 Appropriation
Town of Agawam	473	\$ 16,593,740	\$ 3,091,862	3,467,308	\$ 3,593,424
Agawam Housing Authority	6	212,778	45,103	40,426	41,896
Town of Blandford	5	87,086	19,427	20,886	21,646
Town of Brimfield	38	755,738	137,451	127,458	132,094
Brimfield Housing Authority	2	44,939	8,966	10,121	10,490
Town of Chester	14	395,959	79,202	67,337	69,786
County of Hampden	8	197,801	55,248	514,756	533,478
Town of East Longmeadow	286	8,354,909	1,636,458	1,746,196	1,809,706
East Longmeadow Housing Authority	5	168,949	43,901	40,974	42,464
Town of Granville	41	672,745	121,301	92,455	95,818
Town of Hampden	19	762,348	131,505	243,441	252,295
Hampden Housing Authority	2	44,505	8,966	13,604	14,098
Hampden/Wilbraham Regional School District	205	4,680,742	786,041	633,950	657,007
Town of Holland	29	570,080	113,573	63,199	65,497
Town of Longmeadow	326	10,275,689	2,000,969	2,099,235	2,175,586
Town of Ludlow	308	9,924,446	1,909,812	2,030,526	2,104,378
Ludlow Housing Authority	5	141,088	32,809	38,692	40,099
Town of Monson	159	3,919,599	826,389	626,916	649,717
Monson Housing Authority	2	67,698	22,100	23,467	24,320
Town of Montgomery	5	104,456	20,921	12,863	13,330
Town of Palmer	196	5,712,313	1,414,556	1,122,677	1,163,510
Palmer Fire District	16	410,778	89,462	72,263	74,891
Palmer Housing Authority	2	44,903	7,472	13,078	13,554
Pathfinder Regional High School	28	842,022	156,909	125,510	130,074
Town of Russell	15	274,571	55,292	47,251	48,969
Town of Southwick	79	2,970,092	600,484	704,105	729,714
Three Rivers Fire District	10	128,600	25,404	33,552	34,772
Town of Tolland	4	134,720	33,693	38,900	40,315
Town of Wales	14	323,149	74,841	60,976	63,193
Western Hampden Veteran's District	3	100,121	20,921	21,232	22,004
Town of Wilbraham	136	6,140,754	1,128,253	1,280,657	1,327,236
Wilbraham Housing Authority	5	144,674	29,888	20,106	20,837
Eastern Hampden Veteran's District	1	30,563	5,978	11,128	11,533
Southwick Housing Authority	3	102,082	19,427	13,218	13,698
Southwick/Tolland Regional School District	139	2,501,581	469,234	372,921	386,484
Total	2,589	\$ 77,836,219	\$ 15,223,818	\$ 15,851,384	\$ 16,427,913